

REMARKS

Claims 1-4 are pending in this application and have been examined. Claims 1-4 stand rejected. Claim 1 has been amended. Reconsideration and allowance of Claims 1-4 in view of the amendment and the following remarks are respectfully requested.

The Rejection of Claims 1-4 under 35 U.S.C. § 112, Second Paragraph

Claims 1-4 have been rejected under 35 U.S.C. § 112, second paragraph, as being incomplete for omitting essential elements, such omission amounting to a gap between the elements. According to the Examiner, Claim 1, from which Claims 2-4 depend, lacks a last step that states the accomplishment of the goal of the method. Applicants have amended Claim 1 to clarify that the ATH1 gene product modifies the flowering in plants. As amended, Claims 1-4 more clearly state the accomplishment of the goal of the method. Accordingly, applicants respectfully request withdrawal of this ground of rejection.

The Rejection of Claim 1 under 35 U.S.C. § 102(b)

Claim 1 has been rejected under 35 U.S.C. § 102(b) as being anticipated by Quaedvlieg et al. (1995) *The Plant Cell* 7:117-129 (Quaedvlieg et al.). According to the Examiner, Quaedvlieg et al. teach a process for modifying flowering plants comprising transforming the plants with a construct comprising the coding region of the ATH1 gene under the control of the constitutive cauliflower mosaic virus 35 S promoter. Applicants respectfully disagree.

A reference is anticipatory if it discloses every limitation of the claimed invention either explicitly or inherently. *Atlas Powder Co. v. IRECO, Inc.*, 51 U.S.P.Q.2d 1943, 1945 (Fed. Cir. 1999). Applicants respectfully submit that Quaedvlieg et al. do not disclose every limitation of the invention of Claim 1. Although Quaedvlieg et al. disclose attempts to transform plants with such a construct, no green calli were generated (Quaedvlieg et al., page 124, column 2, lines 4-7). Since the transformation attempts disclosed in Quaedvlieg et al. were unsuccessful, the

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reference does not disclose "transforming the plants with a construct comprising a complete or partial DNA sequence coding for an ATH1 gene product", as required by Claim 1. Moreover, Quaedvlieg et al. does not disclose modifying flowering in plants transformed by ATH1 coding sequences, as is also required by Claim 1. In fact, the experiments described by Quaedvlieg et al. were limited to (1) identifying the ATH1 gene based on a screening genomic libraries with probes of DNA-binding motifs; (2) characterizing the sequence of the ATH1 gene; (3) *in vitro* translation of the ATH1 gene; (4) characterizing the expression of the ATH1 transcripts in seedlings exposed to continuous light and different parts of mature plants; and (5) characterizing the expression of ATH1 in photomorphogenic mutants. No transformed plants were generated or analyzed in this study.

For the reasons described above, Quaedvlieg et al. do not disclose every limitation of the invention in Claim 1. Accordingly, applicants respectfully request withdrawal of this ground of rejection.

The Rejection of Claims 2-4 under 35 U.S.C. § 103(a)

Claims 2-4 have been rejected under 35 U.S.C. § 103(a) as being anticipated by Quaedvlieg et al. in view of Coupland et al. WO 96/14414 (Coupland et al.). According to the Examiner, Quaedvlieg et al. teach a process for modifying flowering in plants by transforming plants with a construct comprising the coding region of ATH1, and Coupland et al. teach a method for modifying flowering in plants using antisense RNA. The Examiner states that it would have been *prima facie* obvious to modify a process for influencing flowering using the ATH1 gene as taught by Quaedvlieg et al. with the method for influencing flowering in plants as taught by Coupland et al. Applicants respectfully disagree.

Applicants submit that the Examiner has failed to establish a *prima facie* case of obviousness. Three requirements must be met for establishing a *prima facie* case of obviousness.

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First, there must be some suggestion or motivation, either in the references themselves or in knowledge generally available to one of ordinary skill in the art, to modify the reference. Second, there must be a reasonable expectation of success. Third, the prior art reference must teach or suggest all the claim limitations. The references relied on by the Examiner fail to meet these requirements.

As discussed more fully in the preceding section, Quaedvlieg et al. do not teach a method for modifying flowering in plants transformed with ATH1 coding sequences. Specifically, Quaedvlieg et al. do not disclose the transformation of plants with the ATH1 gene or any effects of the ATH1 gene product on flowering in plants. Nor do Quaedvlieg et al. suggest or provide motivation for a method for modifying flowering in plants transformed with ATH1 coding sequences. The passage of Quaedvlieg et al. quoted by the Examiner (page 118, column 1, lines 8-13 and 41-49) merely points out that homeobox genes may be involved in determining cell fate, it does not suggest that ATH1 gene products influence flowering in plants. Although Quaedvlieg et al. describes high ATH1 mRNA levels in whole flowers (page 123, column 1, Figure 9), it does not disclose that levels of ATH1 expression are causally related to flowering in plants. Instead, it suggests that the high ATH1 mRNA levels in whole flowers might be explained by the presence of young developing tissues in this part of the mature plant (page 124, column 2, lines 26-29).

Similarly, Coupland et al. do not suggest or provide motivation for modifying flowering in plants transformed with ATH1 coding sequences. Instead, Coupland et al. disclose the use of the CONSTANS gene of *Arabidopsis thaliana* and homologues from *Brassica napus* to influence flowering in transgenic plants. There is no reference to the ATH1 gene. Moreover, there is no suggestion that a gene involved in responding to light, such as ATH1, would be useful to practice the invention Coupland et al.

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For the reasons described above, the teachings of Quaedvlieg et al. and Coupland et al., either alone or in combination, fail to teach, suggest, provide motivation to make, or otherwise render obvious the claimed invention. Accordingly, applicants respectfully request withdrawal of this ground of rejection.

Other Matters

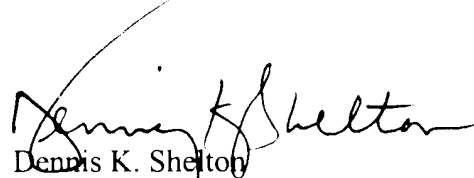
The Examiner's objection to the inventor's Declaration is noted and will be responded to upon allowance of the application.

Conclusion

In view of the above amendment and foregoing remarks, applicants respectfully submit that Claims 1-4 and 18 are in condition for allowance. If any issues remain that may be expeditiously addressed in a telephone interview, the Examiner is encouraged to telephone applicants' attorney at (206) 695-1718.

Respectfully submitted,

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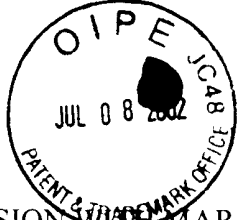
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VERSION WITH MARKINGS TO SHOW CHANGES MADE JULY 1, 2002

In the Claims:

1. (Amended) A process for modifying flowering in plants [which] compris[es]ing transforming the plants with a construct comprising a complete or partial DNA sequence coding for an ATH1 gene product under the control of a promoter functional in plants, wherein the gene product modifies flowering in plants.